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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/617,204 | 07/11/2003 | Berthold Wedding | Q76412 | 3054 |

23373 7590 11/15/2006
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EXAMINER

SINGH, DALZID E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2613 | |

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/617,204 | Applicant(s) WEDDING, BERTHOLD | |
| | Examiner Dalzid Singh | Art Unit 2613 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 4 and 8 recites, "said fiber operates in a non-linear transmission regime to improve transmission characteristics," It is unclear how the fiber performs such function. It is well known that optical fiber is a transmission medium having pre-defined characteristics. Is characteristic of the fiber being modified in order to operate in a non-linear transmission regime?

Claims 4 and 8 provide for the use of said frequency shift keying modulation, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 4 and 8 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under

35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Gnauck et al (US Patent No. 5,400,165).

Regarding claim 1 (as far as understood in view of the 112 2nd paragraph), Gnauck et al disclose method of transmitting a digital signal over an optical fiber link, said method comprising the steps of modulating said digital signal onto an optical carrier using frequency shift keying modulation (see col. 5, lines 38-67; col. 7, lines 23-44);

coupling said frequency modulated optical signal into an optical fiber (see col. 5, lines 38-67);

at the receive side end of said optical fiber, demodulating the received optical signal to obtain said transmitted digital signal (see col. 5, lines 38-67);

wherein for said frequency shift keying modulation step, a modulation index $h < 1/2$ is used, and an optical power launched into the optical fiber is such that said

fiber operates in a non-linear transmission regime to improve transmission characteristics, said modulation index h being defined as maximum frequency separation divided by the bitrate of said digital signal (see col. 6, lines 40-66; col. 9, lines 41-56).

Regarding claim 2, wherein said modulation index h is in the range between $1/2$ and $1/4$ (see col. 6, lines 40-66; col. 9, lines 41-56; Gnauck et al disclose that modulation index could be higher or lower than 0.5).

Regarding claim 3, wherein said modulation index h is $1/3$ (see col. 9, lines 41-56; Gnauck et al disclose that modulation index could be higher or lower than 0.5).

Regarding claim 4 (as far as understood in view of the 112nd paragraph and 101), Gnauck et al disclose an optical transmission system comprising an optical transmitter, an optical fiber and an optical receiver (see col. 5, lines 38-67; col. 7, lines 23-44), wherein said fiber showing a non-linear transmission effect, said optical transmitter being adopted to modulate a digital signal to be transmitted onto an optical carrier using frequency shift keying modulation, wherein said optical transmitter is adopted to use for said frequency shift keying modulation a modulation index $h < 1/2$, and an optical power launched into the optical fiber is such that said fiber operates in a non-linear transmission regime to improve transmission characteristics, said modulation index h being defined as maximum frequency separation divided by the bitrate of said digital signal (see col. 6, lines 40-66; col. 9, lines 41-56).

Regarding claim 5, further comprising an optical dispersion compensation module (see Fig. 1a).

Regarding claim 6, wherein said receiver comprising an optical filter to demodulate the optical signal (see col. 5, lines 64-67).

Regarding claim 8 (as far as understood in view of the 112 2nd paragraph and 101), Gnauck et al disclose optical transmitter for an optical transmission system, said optical transmitter being adapted to modulate a digital signal (DS) to be transmitted over an optical fiber link onto an optical carrier using frequency shift keying modulation (see col. 5, lines 38-67; col. 7, lines 23-44), wherein said optical transmitter is adapted to use for said frequency shift keying modulation a modulation index $h < 1/2$, and an optical power launched into the optical fiber is such that said fiber operates in a non-linear transmission regime to improve transmission characteristics, said modulation index h being defined as maximum frequency separation divided by the bitrate of said digital signal (see col. 6, lines 40-66; col. 9, lines 41-56).

Regarding claim 9, optical transmitter according to claim 8 comprising a directly modulated laser (in optical communication system it is well known to provide direct modulation laser).

Allowable Subject Matter

5. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Roberts et al (US Patent No. 6,473,214) is cited to show methods of and apparatus for optical signal transmission.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS
November 10, 2006

David Singh